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EXAMINER
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DOE, JANIS L

ART UNIT	PAPER NUMBER
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1756

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/737,579

Applicant(s)

ISHIKAWA ET AL

Examiner

Janis L. Dote

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-43 and 45-69 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 1-6, 8-26, 31, 33, 35, 36, 39, 41, 43 and 45-56 is/are allowed.  
6) ☒ Claim(s) 27-30, 32, 34, 37, 38, 40, 42 and 57-69 is/are rejected.  
7) ☒ Claim(s) 7 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 23 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

Art Unit: 1756

1. The examiner acknowledges the amendments filed on Dec. 3, 2004, to claims 2, 5, 6, 8, 9, 18, 57, and 68. Claims 1-43 and 45-69 are pending.

2. The objection to the specification set forth in the office action mailed on Jun. 4, 2004, paragraph 4, has been withdrawn in response to the amended paragraph filed on Dec. 3, 2004, beginning at specification page 42, line 7.

The objections to the specification set forth in the office action mailed on Jun. 4, 2004, paragraph 5, have been withdrawn in response to: applicants' response filed on Dec. 3, 2004, specifically at page 45, lines 18-25; the paragraph filed on Dec. 3, 2004, inserted at specification page 16, between lines 6 and 7; the amended paragraphs filed on Dec. 3, 2004, beginning at specification page 22, line 11, and page 18, line 12; the paragraphs filed on Dec. 3, 2004, inserted at specification page 21, between lines 12 and 13, and at page 44, between lines 19 and 20; and the amended paragraphs filed on Dec. 3, 2004, beginning at specification page 42, line 7, and page 8, line 6.

The rejections of claims 2, 5, 6, 8, 9, and 18 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Jun. 4, 2004, paragraph 8, have been withdrawn in

Art Unit: 1756

response to the amendments filed on Dec. 3, 2004, to claims 2, 5, 6, 8, 9, and 18.

The rejection of claims 57-68 under 35 U.S.C. 112, first paragraph, set forth in the office action mailed on Jun. 4, 2004, paragraph 10, item (1), has been withdrawn in response to the amendment filed on Dec. 3, 2004, to claim 57.

The rejections of claims 1-3, 10, 12, 14-18, 20-23, 25, 26, 31, 33, 35, 36, 39, 41, 43, 45-49, 51, 54, and 55 under 35 U.S.C. 102(e) over US 6,656,653 B2 (Mitsubishi), and of claims 24, 27-30, 32, 34, 37, 38, 40, 42, 57-69, under 35 U.S.C.

102(e)/103(a) over Mitsubishi, set forth in the office action mailed on Jun. 4, 2004, paragraph 18-20, have been withdrawn. The Rule 132 declaration executed by J. Derek Mason, an attorney at Oblon, Spivak, McClelland, Maier & Neustadt, P.C., on Dec. 3, 2004, is sufficient to show that the subject matter recited in the instant claims was invented by applicants prior to Dec. 15, 2000, the filing date the reference Mitsubishi. Accordingly, Mitsubishi is not prior art. (The examiner notes that the declaration contains a pair of typographic errors, referring to the date of Dec. 15, 2004, in paragraph 10 of the declaration, rather than Dec. 15, 2000.)

The terminal disclaimer filed on Dec. 3, 2004, disclaiming the terminal portion of any patent granted on this application

Art Unit: 1756

which would extend beyond the expiration date of US Patent No. 6,656,653, has been reviewed and is accepted. The terminal disclaimer has been recorded.

Accordingly, the rejections under the judicially created doctrine of obviousness-type double patenting of claims 1-3, 10, 12, 14, 15, 16, 20-23, 25, 31, 33, 35, 36, 39, 41, 43, 45-49, 51, 54, 55, over claims 1-119 of U.S. Patent No. 6,656,653 B2 (Mitsubishi), and of claim 18 over claims 1-119 of Mitsubishi, set forth in the office action mailed on Jun. 4, 2004, paragraphs 23 and 24, respectively, have been withdrawn.

3. The disclosure is objected to because of the following informalities:

The equation at page 47, line 21, is missing the inequality sign " $\leq$ ." See the equation at page 7, line 20.

Appropriate correction is required.

4. The examiner notes that the instant specification at page 30, lines 5-8, defines the term "substantially free of wax" recited in the instant claims as indicating "that the level of wax is preferably less than 1 w/w%, more preferably less than 0.5 w/w%, most preferably less than 0.1 w/w%."

Art Unit: 1756

The term binder resin recited in instant claims 18, 19, and 33 is defined in the specification at page 41, lines 5-8, as meaning "the sum of resin constituting primary polymer particles and the resin constituting particulate resin, as described earlier."

The specification defines the term 50% circular degree recited in the instant claims at page 43, lines 4-10.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 68 and 69 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Instant claims 68 and 69 recite that the binder resin comprises an "agglomerate of particles comprising at least

Art Unit: 1756

primary polymer particles, and at least one layer of a particulate resin coated on a substantial surface portion of said agglomerate of particles." Applicants assert that the binder resin is supported by the binder limitation of originally filed claim 1, and supported in the specification at page 41, lines 5-8.

However, the originally filed specification does not provide an adequate written description of the toner recited in instant claim 68. The originally filed specification at page 41, lines 5-8, discloses that the term "binder resin is used herein to mean the sum of resin constituting primary polymer particles and the resin constituting particulate resin, as described earlier" (emphasis added). The originally filed specification at page 7, lines 2-11, discloses and originally filed claim 1 recites toners comprising an agglomerate of particles comprising primary polymer particles and primary colorant particles, and a layer of a particulate resin coated on a substantial surface portion of said agglomerate of particles, wherein "at least one of the primary particles and said particulate resin further comprises a wax." The toner particles recited in instant claims 68 and 69 are broader than the disclosed toner particles comprising an agglomeration of primary polymer particles and colorant particles and a coating of

Art Unit: 1756

particulate resin, because they include toner particles where the wax is not present in either the primary polymer particles or the particulate resin. Applicants' description of "primary polymer particles" and agglomerates having a layer of particulate resin, where either comprises a wax, does not suffice as a description of the general concept now claimed.

Applicants did not address this rejection in the response filed on Dec. 3, 2004. Accordingly, the rejection of claims 68 and 69 stands.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 27-30, 32, 34, 40, 57-62, 65, and 67 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 5,935,751 (Matsuoka'751).

Matsuoka'751 discloses a negatively chargeable toner comprising toner particles comprising a binder resin, a colorant, and paraffin wax. See example 7 at cols. 21 and 22, and Table 4 at col. 25, example 7. The paraffin wax has a melting point of 85°C, which is within the range of 30 to 100°C recited in instant claims 32 and 61. The wax is present in an



Art Unit: 1756

amount of 5.0 wt% based on the weight of the binder resin. The amount of 5.0 wt% is within the range of "from 1 to 35 parts by weight to 100 parts by weight of binder resin" recited in instant claims 34 and 62. The toner has a volume-average particle size of 8.5  $\mu\text{m}$ , which is within the range of from 4 to 10  $\mu\text{m}$  recited in instant claims 29 and 59. The wax is dispersed in the binder resin having a dispersed particle size (or diameter) of 0.9  $\mu\text{m}$ . The particle size of 0.9  $\mu\text{m}$  is within the particle size ranges recited in instant claims 28, 30, 58, and 60. The wax particles are present on the surface of the toner particles in an amount of 5.8 wt% based on the total weight components present on the surface of the toner. See Table 4. The surface of the toner particles is defined as the surface layer ranging to a depth of 0.1  $\mu\text{m}$  from the outermost surface of the toner. Col. 7, lines 2-6.

Matsuoka'751 further discloses that the toner in example 7 has a shape factor MLS2 of 107. According to Matsuoka'751, MLS2 is defined as the (absolute maximum length of the toner particle)<sup>2</sup>  $\times \pi/4 \times 100$ . Col. 14, line 16. (The examiner notes that the term "(absolute maximum length of the toner particle)<sup>2</sup>" at col. 14, line 16, of Matsuoka'741 is in error. Because the MLS2 is a unit-less parameter, the "2" should have been shown as a "subscript 2" such that the term "absolute maximum length" is

Art Unit: 1756

squared, i.e., it should have units of length, squared.)

Matsuoka'751 discloses that when the shape factor MLS2 is 100, the toner has a spherical shape. Col. 14, lines 24-25.

Matsuoka'751 does not disclose that the toner has a 50% circular degree of from 0.95 to 1 recited in instant claims 27 and 67.

However, the instant specification at page 43, lines 6-9, discloses that when the 50% circular degree is 1, the toner is "substantially spherical." Thus, because the Matsuoka'751 toner has a shape factor MLS2 of 107, which is close to the value of 100 for spherical toners, it is reasonable to presume that the Matsuoka'751 toner has a 50% circular degree of from 0.95 to 1 as recited in instant claim 27 and 67. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Matsuoka'751 does not explicitly disclose that the distribution of paraffin wax particle diameters has a half-width of 0.06  $\mu\text{m}$  or less. Nor does Matsuoka'751 disclose that the wax particles are present in the toner in the ratio recited in instant claims 27 and 57. However, as discussed above, the amount of wax particles present in the toner particles within the surface of the toner particles to a depth of 0.1  $\mu\text{m}$  is 5.8 wt% based on the total weight of components on the surface of the toner particles.

Art Unit: 1756

In addition, the instant specification at page 49, lines 4-11, discloses that when the toner particles of the invention are made by agglomerating and fusing resin encapsulated wax particles, the wax particles in the resulting toner particles are "considered substantially to maintain the particle diameter at a time when present" in the resin encapsulated wax particles. In other words, the wax particles dispersed in the toner particles have the same or substantially the same particle size as the wax particles present in the resin encapsulated wax particles before agglomeration and fusion. The instant specification also shows that toner particles made by agglomerating and fusing said resin encapsulated wax particles can comprise wax particles having a half-width of the number-average particle size of 0.06  $\mu\text{m}$  or less and dispersed in the toner particles as recited in instant claims 27 and 57. Instant specification, example 1. Such toner particles can be fixed over a temperature range of 130 to 220°C, have excellent antiblocking characteristics, and provide OHP transparencies having a transmission of 70%. Specification, table at page 132, example 1.

Matsuoka'751 discloses that the initial wax particles used to make its toner particles have an initial average particle size of 0.87  $\mu\text{m}$ . Table 4, example 7. As discussed above, the

Art Unit: 1756

average wax dispersion particle size in the Matsuoka'751 toner particles is 0.9  $\mu\text{m}$ . Matsuoka'751 discloses that its toner particles provide OHP transparencies having a transmission of 90%, have good anti-thermal blocking characteristics, and can be fixed up to a temperature of 200°C without offset. See Table 4 at col. 27, example 7. In summary, the Matsuoka'751 toner (1) meets the compositional limitations and physical limitations (toner and wax average particle sizes) recited in the instant claims, (2) appears to have a small relative amount of wax particles in the surface layer of 0.1  $\mu\text{m}$  of the toner particles, (3) is made by a method where the particle size of the wax particles dispersed in the toner particles is substantially the same as the particle size of the initial wax particles used in making the toner particles, and (4) appears to have properties that are similar or substantially similar to those of toner particles comprising wax particles that meet the particle size distribution and location limitations recited in instant claims 27 and 57. Accordingly, it is reasonable to presume that the Matsuoka'751 wax particles dispersed in the toner particles have the particle size distribution and location limitations recited in instant claims 27 and 57. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Art Unit: 1756

9. Claims 37 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka'751 combined with US 5,213,932 (Shimazaki).

Matsuoka'751 discloses a toner as described in paragraph 8 above, which is incorporated herein by reference.

Matsuoka'751 does not exemplify a toner comprising a magenta colorant as recited in the instant claims. However, the reference discloses that its toner may comprise a magenta color. Col. 10, lines 66-67.

Shimazaki discloses a magenta colorant comprising a mixture of 40 to 60 parts by weight of rhodamine dye C.I. Solvent Red 49 and 60 to 40 parts by weight of C.I. Pigment Red 48, compound (2). Shimazaki, col. 2, line 55, to col. 3, line 11. Compound (2) meets the limitations of formula (1) recited in instant claims 37 and 63. Shimazaki discloses that toners comprising said magenta colorant have good weatherability properties, such as good light fastness and heat-resistance. Shimazaki also discloses that said toners provide clear magenta toner images and satisfactory hue. Col. 1, lines 51-55, and col. 4, lines 54-55.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Shimazaki, to use Shimazaki's magenta colorant as the colorant in the toner

Art Unit: 1756

disclosed by Matsuoka'751, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having the benefits disclosed by Shimazaki.

10. Claim 38 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka'751 combined with Japanese Patent 59-165069 (JP'069), as evidenced by the USPTO English-language translation of JP'069.

Matsuoka'751 discloses a toner as described in paragraph 8 above, which is incorporated herein by reference.

Matsuoka'751 does not disclose the use of a magenta colorant as recited in the instant claims. However, the reference discloses that its toner may comprise a magenta color. Col. 10, lines 66-67.

JP'069 discloses a magenta colorant that meets the limitations of formula (2) recited in instant claims 38 and 64. Translation, page 4, line 5. JP'069 discloses that toners comprising said magenta colorant have the required characteristic for color electrophotography, e.g, high transparency, and provide stable images to heat and light. See JP'069, the table at page 525; example 1; and the translation, pages 5-6.

Art Unit: 1756

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'069, to use JP'069's magenta colorant as the colorant in the toner disclosed by Matsuoka'751, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having the benefits disclosed by JP'069.

11. Claims 42 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka'751 combined with US 5,547,802 (Kawase).

Matsuoka'751 discloses a toner as described in paragraph 8 above, which is incorporated herein by reference.

Matsuoka'751 does not disclose that his toner particles have a ratio of volume-average particle diameter to number-average diameter as recited in instant claims 42 and 66.

Kawase discloses that in order to obtain images with excellent dot reproduction and sharpness, it is preferable that the volume mean diameter ( $D_v$ ) of the toner particles be in the range of 3 to 9  $\mu\text{m}$ , and that the ratio ( $D_v/D_p$ ) of the volume mean particle diameter ( $D_v$ ) to the number-average particle ( $D_p$ ), be in the range of 1.00 to 1.15. Col. 18, lines 50-54. As discussed in paragraph 8 above, the Matsuoka'751 toner particles

Art Unit: 1756

have a volume-average particle size of 8.5  $\mu\text{m}$ , which is within the teachings of Kawase.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kawase, to adjust through routine experimentation the particle size of the Matsuoka'751 toner particles such that the resultant toner particles have a ratio of  $D_v/D_p$  of from 1 to 1.15 that meets the limitation recited in instant claims 42 and 66, because that person would have had a reasonable expectation of successfully obtaining a toner that provides images with excellent dot reproduction and sharpness.

12. Applicants' arguments filed on Dec. 3, 2004, with respect to the rejections over Matsuoka'751 in paragraphs 8-11 above have been fully considered but they are not persuasive.

Applicants assert that the Matsuoka'751 toner in example 7 does not satisfy the relationship recited in instant claims 27 and 57. Applicants assert that the formula  $(A/B)/(C/D)$  for the Matsuoka'751 toner has a value of 0.833, which is outside the range of 0.1 or less recited in instant claims 27 and 57.

However, applicants' determination that the Matsuoka'751 toner has a value of 0.833 is not persuasive, because it is mere attorney argument that is not supported by any factual evidence



Art Unit: 1756

on the present record. Applicants' determination of the value of 0.833 is incomplete and confusing. For example, applicants' determination of the parameters B and D are not within the definitions of the parameters recited in instant claims 27 and 57. Instant claims 27 and 57 recite that B is the "total area of said outermost layer of the toner" and D is the "total area of said remainder toner," wherein "all areas are measured as observed in a cross section of the toner through a center point of the toner." Applicants appear to be calculating B and D as ratios of areas with respect to the area of the entire toner, not areas as required in instant claims 27 and 57. Moreover, applicants' calculations of the parameters A and C with the Matsuoka'751 value of 5.8% by weight of wax on the surface are not within the definitions of A and C in instant claims 27 and 57. Instant claims 27 and 57 define A and C as the "total area of particulate wax contained in the outermost layer of the toner to a depth of 0.1  $\mu\text{m}$ " and the "total area of particulate wax contained in a remainder of the toner (at a depth of greater than 0.1  $\mu\text{m}$  from the surface of the toner)," respectively. In other words A and C have units of area. However, applicants' calculated A and C have units of weight. Moreover, applicants have not explained how the weight amount of wax particles in the surface layer can be converted to the total

Art Unit: 1756

area of the wax particles in the surface without knowing the number density and size of the wax particles in the surface layer. Nor have applicants explained how the total area of the wax particles in the "remainder of the toner" can be determined by the weight percentage of wax on the surface of the toner. The total area of the wax particles in the "remainder of the toner" is dependent on the number density of wax particles present in the "remainder of toner" and the particle size of the wax particles. Accordingly, applicants have not met their burden to show that the Matsuoka'751 toner in example 7 exhibits a value of the formula  $(A/B)/(C/D)$  recited in instant claims 27 and 57 of greater than 0.1, and the rejections stand.

13. The amendment filed on Dec. 3, 2004, to claim 57, removed the limitation "obtained by addition polymerization," which caused the withdrawal of prior art rejections with respect to the reference US 2002/0028402 A1 (Matsuoka'402) made in a previous office action. See the office action mailed on Jun. 4, 2004, paragraph 3. In addition, the indicated allowability of claims 27-30, 32, 34, and 40 over Matsuoka'402 set forth in the office action mailed on Nov. 18, 2003, paragraph 4, is withdrawn, upon further review of Matsuoka'402. Accordingly, rejections over Matsuoka'402 are set forth infra.

Art Unit: 1756

14. Claims 27-30, 32, 34, 40, 57-62, 65, and 67 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 2002/0028402 A1 (Matsuoka'402).

Matsuoka'402 discloses a negatively chargeable toner comprising toner particles comprising a binder resin, a colorant, and paraffin wax. See Table 2, the yellow toner of example 1, and paragraph 0126. The binder resin comprises a linear and non-linear polyester resins. The linear polyester resin is obtained by reacting polyoxypropylene(2,2)-2,2-bis(4-hydroxyphenyl)propane and fumaric acid. The paraffin wax has a melting point of 85°C, which is within the range of 30 to 100°C recited in instant claims 32 and 61. The wax is present in an amount of 4.95 wt% based on the weight of the binder resin. The amount of 4.95 wt% is within the range of from 1 to 35 parts recited in instant claims 34 and 62. (The amount of 4.95 wt% is determined from the data presented at paragraph 0115.) The toner has a volume-average particle size of 7.8  $\mu\text{m}$ , which is within the range of from 4 to 10  $\mu\text{m}$  recited in instant claims 29 and 59. The wax is dispersed in the binder resin having a dispersed particle size (or diameter) of 0.8  $\mu\text{m}$ . The particle size of 0.8  $\mu\text{m}$  is within the particle size ranges recited in

Art Unit: 1756

instant claims 28, 30, 58, and 60. The wax particles are present on the surface of the toner particles in an amount of 4.2 wt% based on the total weight of the wax present in the toner. See Table 2. The surface of the toner particles is defined as a layer extending from the top of the toner particle to a depth of 0.1  $\mu\text{m}$  as shown as d2 in Fig. 2. Paragraph 0059.

Matsuoka'402 further discloses that the toner has a shape factor MLS2 of 107. According to Matsuoka'402, MLS2 is defined as the  $(\text{absolute maximum length of the toner particle})^2 \times \pi/4 \times 100$ . See reference claim 1. When the shape factor MLS2 is 100, the toner has a spherical shape. Matsuoka'402 does not disclose that the toner has a 50% circular degree of from 0.95 to 1 recited in instant claims 27 and 67. However, the instant specification at page 43, lines 6-9, discloses that when the 50% circular degree is 1, the toner is "substantially spherical." Thus, because the Matsuoka'402 toner has a shape factor MLS2 of 107, which is close to the value spherical toners, it is reasonable to presume that the Matsuoka'402 toner has a 50% circular degree of from 0.95 to 1 as recited in instant claim 27 and 67. The burden is on applicants to prove otherwise.

Fitzgerald, supra.

Matsuoka'402 does not explicitly disclose that the distribution of releasing agent particle diameters has a half-

Art Unit: 1756

width of 0.06  $\mu\text{m}$  or less. Nor does Matsuoka disclose that the wax particles are present in the toner in the ratio recited in instant claims 27 and 57. However, as discussed above, the amount of wax particles present in the toner particles within the surface of the toner particles to a depth of 0.1  $\mu\text{m}$  is 4.2 wt% based on the total weight of the components on the surface of the toner particles. As shown in the "schematically typical view showing toner particles in section" in Fig. 2, the number of particles of releasing agent in the surface layer of 0.1  $\mu\text{m}$  appears to be much less than the number of particles at a depth of 0.1  $\mu\text{m}$  and more. Paragraphs 0026 and 0056.

In addition, the instant specification at page 49, lines 4-11, discloses that when the toner particles of the invention are made by agglomerating and fusing resin encapsulated wax particles, the wax particles in the resulting toner particles are "considered substantially to maintain the particle diameter at a time when present" in the resin encapsulated wax particles. In other words, the wax particles dispersed in the toner particles have the same or substantially the same particle size as the wax particles present in the resin encapsulated wax particles before agglomeration and fusion. The instant specification also shows that toner particles made by agglomerating and fusing said resin encapsulated wax particles

Art Unit: 1756

can comprise wax particles having a half-width of the number-average particle size of 0.06  $\mu\text{m}$  or less and dispersed in the toner particles as recited in instant claims 27 and 57. Instant specification, example 1. Such toner particles can be fixed over a temperature range of 130 to 220°C, have excellent antiblocking characteristics, and provide OHP transparencies having a transmission of 70%. Specification, table at page 132, example 1.

Matsuoka'402 discloses that the initial wax particles used to make his toner particles have an initial average particle size of 0.81  $\mu\text{m}$ . Paragraph 0113, line 15. As discussed above, the average wax dispersion particle size in the Matsuoka'402 toner particles is 0.80  $\mu\text{m}$ . See Table 2, yellow toner.

Matsuoka'402 discloses that his toner particles provide OHP transparencies having a transmission of 80%, have good anti-thermal blocking characteristics, and can be fixed from a range of 130 to 200°C without offset. See Table 3, yellow toner. In summary, the Matsuoka'402 toner (1) meets the compositional limitations and physical limitations (toner and wax average particle sizes) recited in the instant claims, (2) has a small relative amount of wax particles in the surface layer of 0.1  $\mu\text{m}$  of the toner particles, (3) is made by a method where the particle size of the wax particles dispersed in the toner

Art Unit: 1756

particles is substantially the same as the particle size of the initial wax particles used in making the toner particles, and (4) appears to have properties that are similar or substantially similar to those of toner particles comprising wax particles that meet the particle size distribution and location limitations recited in instant claims 27 and 57. Accordingly, it is reasonable to presume that the Matsuoka'402 wax particles dispersed in the toner particles have the particle size distribution and location limitations recited in instant claims 27 and 57. The burden is on applicants to prove otherwise. Fitzgerald, supra.

15. Claims 37 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka'402 combined with Shimazaki.

Matsuoka'402 discloses a toner as described in paragraph 14 above, which is incorporated herein by reference.

Matsuoka'402 does not exemplify a toner comprising a magenta colorant as recited in the instant claims. However, the reference discloses that its toner may comprise a magenta color. Matsuoka'402, paragraph 0066.

Shimazaki discloses a magenta colorant that meets the limitations of formula (1) recited in instant claims 37 and 63.

Art Unit: 1756

The discussion of Shimazaki in paragraph 9 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Shimazaki, to use Shimazaki's magenta colorant as the colorant in the toner disclosed by Matsuoka'402, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having the benefits disclosed by Shimazaki.

16. Claims 38 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka'402 combined with JP'069, as evidenced by the USPTO English-language translation of JP'069.

Matsuoka'402 discloses a toner as described in paragraph 14 above, which is incorporated herein by reference.

Matsuoka'402 does not disclose the use of a magenta colorant as recited in the instant claims. However, the reference discloses that its toner may comprise a magenta color. Matsuoka'402, paragraph 0066.

JP'069 discloses a magenta colorant that meets the limitations of formula (2) recited in instant claims 38 and 64. The discussion of JP'069 in paragraph 10 above is incorporated herein by reference.



It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'069, to use the JP'069 magenta colorant as the colorant in the toner disclosed by Matsuoka'402, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having the benefits disclosed by JP'069.

17. Claims 42 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka'402 combined with Kawase.

Matsuoka'402 discloses a toner as described in paragraph 14 above, which is incorporated herein by reference.

Matsuoka'402 does not disclose that his toner particles have a ratio of volume-average particle diameter to number-average diameter as recited in instant claims 42 and 66.

Kawase discloses that in order to obtain images with excellent dot reproduction and sharpness, it is preferable that the volume mean diameter (Dv) of the toner particles be in the range of 3 to 9  $\mu\text{m}$ , and that the ratio (Dv/Dp) of the volume mean particle diameter (Dv) to the number-average particle (Dp), be in the range of 1.00 to 1.15. Col. 18, lines 50-54. As discussed in paragraph 14 above, the Matsuoka'402 toner particles have a volume-average particle size of 7.8  $\mu\text{m}$ , which is within the teachings of Kawase.

Art Unit: 1756

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kawase, to adjust through routine experimentation the particle size of the Matsuoka'402 toner particles such that the Matsuoka'402 toner particles have a ratio of  $D_v/D_p$  of from 1 to 1.15 that meets the limitation recited in instant claims 42 and 66, because that person would have had a reasonable expectation of successfully obtaining a toner that provides images with excellent dot reproduction and sharpness.

18. Applicants are advised that should claim 27 be found allowable, claim 67 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

19. Claim 7 is objected under 37 CFR 1.75 as being a substantial duplicate of claim 4. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in

Art Unit: 1756

wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

20. Claims 1-6, 8-26, 31, 33, 35, 36, 39, 41, 43, and 45-56 are allowable over the prior art of record.

The toner recited in instant claims 1-6, 8-26, 31, 33, 35, 36, 39, 41, 43, 45, and 46, and the process of making a toner recited in instant claims 47-56 are allowable over the prior art of record for the reasons discussed in paragraph 2 supra.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/737,579

Page 27

Art Unit: 1756

JLD

Feb. 13, 2005

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